ABSTRACT

A waveguide for use with a dual polarization waveguide probe system is described which provides an improved frequency response across a desired frequency range (10.7 to 12.75 GHz) and particularly at the band edges. This is achieved by providing a waveguide with a rotator that incorporates a reflecting plane in combination with a differential phase shift portion in the form of a waveguide of slightly asymmetrical cross section so that orthogonal signals which travel through this portion have a different cut-off wavelength. This results in a rotator which achieves 180° of phase shift between two orthogonal components across the frequency range of signals received by the waveguide. The reflecting plate and the differential phase shift portion have inverse frequency characteristics so that the combined phase shift characteristic of the rotator has a flatter frequency characteristic.